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Refer to Record No. 0070039, 2007, Incoming
for additional information

PERMIT AREA EXPANSION
ADDITION OF 40 ACRES TO
FEDERAL LEASE U-07064-027821

DUGOUT CANYON MINE
CANYON FUEL COMPANY, LLC
C/007/039

JANUARY 2007

CHAPTER 1

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

M&RP

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CHAPTER 1

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

110 MINIMUM REQUIREMENTS FOR LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

111 Introduction

For information pertaining to this section(s) refer to General Chapter 1 binder for Canyon Fuel Company, LLC prepared for the Dugout Canyon Mine, Soldier Canyon Mine and Banning Loadout operations.

112 Identification of Interests

112.100 Business Entity

The Dugout underground coal mining operation is located in Carbon County, Utah. The surface facilities for the Dugout Canyon Mine are within Section 23, Township 13 South, Range 12 East, SLBM approximately 11 miles northeast of Wellington, Utah.

For addition information refer to General Chapter 1 binder for Canyon Fuel Company, LLC Dugout Canyon Mine, Soldier Canyon Mine and Banning Loadout operations.

112.200 Applicant and Operator

For information pertaining to this section refer to General Chapter 1 binder for Canyon Fuel Company, LLC prepared for Dugout Canyon Mine, Soldier Canyon Mine and Banning Loadout operations.

112.300 Officers of the Applicant

For information pertaining to this section refer to General Chapter 1 binder for Canyon Fuel Company, LLC prepared for Dugout Canyon Mine, Soldier Canyon Mine and Banning Loadout operations.

112.400 Coal Mining and Reclamation Operation Owned or Controlled

The following list describes all permits held by Canyon Fuel Company, LLC, all pending applications for permits, and any permit recognized as necessary in the future for which no application has been filed. Identification numbers of applications or permits are contained in the following list. Many of the agencies listed, however, have review responsibility only and may not have submitted a numbered permit.

<u>Permit</u>	<u>Issuing Authority</u>	<u>Approval Status/ Identification No.</u>
Mining and Reclamation Permit C/007/039	State of Utah Department of Natural Resources Division of Oil, Gas and Mining Department of Interior U.S. Geological Survey and Office of Surface Mining Department of Agriculture U.S. Forest Service Manti La Sal National Forest	Approved
U.P.D.E.S. Permit UTG-040020/UT0025593	Environmental Protection Agency and Utah D.E.Q.	Approved
Business License	Carbon County	Approved
Mine Health and Safety Permits 42-01890 and 42-01888, 1211-UT-09-01890-01	Mine Safety and Health Administration - Utah	Approved
Radio Permits	Federal Communications	Approved

	Commission	
Certificate of Insurance and Authorization to do Business in State	State Industrial Development Commission	Approved
Road Agreement	Carbon County	Approved
Air Quality Approval Order	State of Utah Utah Air Conservation Committee Department of Health Division of Environmental Health	Approved
Stream Channel Alteration Permit	State Engineer	Approved

The Canyon Coal Company, LLC mining permits and operations are:

SUFCO Mine	C/041/002
Skyline Mine	C/007/005
Soldier Canyon Mine	C/007/018
Banning Loadout	C/007/034
Dugout Canyon Mine	C/007/039

The issuing authority for the Canyon Fuel Company permits is the UDOGM.

Operations held by subsidiary companies of Arch Coal, Inc. and corporate structure are presented on Figure 1-1 in the General Chapter 1 for Canyon Fuel Company, LLC. Facility names, mailing addresses and permit numbers for these operations are provided in either Table 1-1 and/or Table 1-2. For additional information refer to the General Chapter 1 binder for Canyon Fuel Company, LLC prepared for the Dugout Canyon Mine, Soldier Canyon Mine and Banning Loadout operations.

112.500 Legal or Equitable Owner of the Surface and Mineral Properties

Canyon Fuel Company, LLC
SCM/Dugout Canyon Mine

Mining and Reclamation Plan
January 29, 2007 ~~December 29, 2006~~

The legal and equitable owners of the surface and mineral properties to be affected by this mining operation during the duration of the permit period are the State of Utah, Bureau of Land Management and Canyon Fuel Company, LLC. Refer to Refuse Pile Amendment for additional ownership information.

Canyon Fuel Company, LLC
6955 South Union Park Center
Suite 540
Salt Lake City, UT 84047
Telephone: (801)569-4700

Milton & Ardith Thayne Trust
Sunnyside Star Route
Price, Utah 84501

State of Utah
School and Institutional
Trust Lands Administration
675 East 500 South
Salt Lake City, Utah 84102-2818

George & Alice Conover Etal
2701 Georgia Way
Sandy, Utah 84092

United States of America
Department of Interior
Bureau of Land Management
Price Coal Office
125 South 600 West
Price, Utah 84501

Gil L. Conover
450 So. State
Ferron, Utah 84523

No area within the lands to be affected by surface operations and facilities or within the area of coal to be mined is under a real estate contract.

Coal mining and reclamation operations are listed on Table 1-1 and the corporate structures is presented on Figure 1-1 in the General Chapter 1 binder.

112.600 Owners of Record of Property Contiguous to Proposed Permit Area

Owners of record for surface and mineral properties contiguous to the proposed permit area are shown on Plate 1-1 and 1-2, with the names and addresses listed below.

United States of America
Department of Interior
Bureau of Land Management

Gil L. Conover
450 So. State
Ferron, Utah 84523

Canyon Fuel Company, LLC
SCM/Dugout Canyon Mine

Mining and Reclamation Plan
January 29, 2007 ~~December 29, 2006~~

Price Coal Office
125 South 600 West
Price, Utah 84501

J. George Conover
275 West Main
Ferron, Utah 84523

State of Utah
School and Institutional Trust Lands Admin.
675 East 500 South
Salt Lake City, Utah 84102-2818

KFJ Ranch Partnership
C/O Kerwin Jensen
Cleveland, Utah 84518

George & Alice Conover Etal
2701 Georgia Way
Sandy, Utah 84092

Milton & Ardith Thayne Trust
Sunnyside Star Route
Price, Utah 84501

Surface ownership along the county road is shown on Plate 1-3. In addition refer to the Refuse Pile Amendment for additional information.

112.700 MSHA Numbers

The Dugout Canyon Mine MSHA numbers are:

MSHA No. 42-01890 Rock Canyon seam (west side of canyon)

MSHA No. 42-01888 Gilson seam (west side of canyon)

MSHA No. 1211-UT-09-01890-01 Dugout Canyon Mine Refuse Pile

112.800 Interest in Contiguous Lands

A State Institutional Trust Lands coal tract is contiguous to the east of the Dugout Canyon Mine permit boundary. Upon approval by UDOGM, Canyon Fuel Company, LLC intends to begin mining the coal reserves in this lease during the current term of this permit application.

112.900 Certification of Submitted Information

Canyon Fuel Company, LLC hereby attests that the information contained in this permit document is true and correct to the best of their knowledge.

113 Violation Information

For violation information refer to Table 1-2 in the General Chapter 1 binder for Canyon Fuel Company, LLC prepared for the Dugout Canyon Mine, Soldier Canyon Mine and Banning Loadout operations.

114 Right-of-Entry Information

The right to enter the leaseholds conveyed by the State coal leases is conferred to the lessee by the Mineral Leasing Act of 1920 and the leases themselves. Copies of State coal leases ML-42648 and ML-42649, and Federal Lease U07064-027821 which grant CFC the right to enter and conduct underground mining operations, are presented in Appendix 1-1.

The legal description of the CFC leases is:

State Lease ML-42648 - (3640 acres) - Approved

T. 13 S., R. 12 E., SLBM, Utah

Section 8: E1/2

Section 10: S1/2

Section 11: S1/2

Sections 14 and 15: All

Section 17: NE1/4; E1/2SW1/4; SE1/4

Section 20: E1/2NW1/4; SW1/4NW1/4; N1/2NE1/4
Section 21: N1/2NW1/4; NE1/4
Section 22: N1/2; N1/2S1/2
Section 23: W1/2NW1/4

State Lease ML-42649 - (2212 acres) - Approved

T. 13 S., R. 12 E., SLBM, Utah

Section 3: Lots 1, 2, 3, 4, S1/2 (all)
Section 4: Lots 1, 2, 3, 4, S1/2 (all)
Section 5: Lots 1, 2, SE1/4
Section 9: All
Section 10: N1/2
Section 11: N1/2

Federal Coal Lease U-07064-027821 - (~~2,416.14~~ 2,456.14 acres) - Approved 1 January 1957

T. 13 S., R. 12 E., SLBM, Utah

Section 13: S1/2
Section 23: E1/2E1/2, W1/2SE1/4, NE1/4SW1/4
Section 24: All
Section 25: N1/2N1/2
Section 26: N1/2NE1/4

T. 13 S., R. 13 E., SLBM, Utah

Section 18: Lots 3, 4, E1/2SW1/4; SE1/4
Section 19: Lots 1-4, E1/2W1/2, NE1/4, NW1/4SE1/4
Section 21: NW1/4NW1/4
Section 30: Lot 1

Federal BLM Right-of-Way UTU-76601 - (10 acres) - Sept. 1998

T. 13S., R. 12 E., SLBM, Utah

Section 23: NE1/4NW1/4NW1/4SW1/4,N1/2NE1/4NW1/4SW1/4,

SE1/4NW1/4NW1/4SW1/4

Fee land owned by CFC as described below: (800 acres)

T. 13 S., R. 12 E., SLBM, Utah

Section 16: All

Section 23: E1/2NW1/4; W1/2NE1/4

BLM Rt-of-Way UTU-77985 - (57.5 acres)

T13 S., R12E., SLBM, Utah

Section: 22: NE1/4SW1/4SW1/4SE1/4, S1/2SW1/4SW1/4SE1/4,
N1/2SE1/4SW1/4SE1/4, SE1/4NE1/4SW1/4SE1/4,
S1/2NW1/4SE1/4SE1/4, SW1/4NE1/4SE1/4SE1/4,
N1/2NE1/4SE1/4SE1/4

Section 23: NW1/4SW1/4NW1/4SW1/4, S1/2NW1/4NW1/4SW1/4,
NE1/4NW1/4NW1/4SW1/4, N1/2NE1/4NW1/4SW1/4

Section 27: NE1/4SE1/4NE1/4NW1/4, S1/2SE1/4NE1/4NW1/4,
SE1/4NE1/4NE1/4NW 1/4, W1/2 NW1/4NW1/4NE1/4

BLM Parcel (2.5 acres)

T13 S., R12E., SLBM, Utah

Section: 23: NW1/4NW1/4NW1/4SW1/4

State Lease ML-48435-OBA - (2,560 acres)

T13 S., R13 E., SLBM, Utah (~~Currently within Permit Area, approximately 200 acres~~)

Section 17: W1/2W1/2SW1/4, W1/2E1/2W1/2SW1/4

Section 19: NE1/4SE1/4, S1/2SE1/4

Section 20: W1/2W1/2W1/2, W1/2E1/2W1/2W1/2

T13 S., R13 E., SLBM, Utah (Added to Permit Area in 2005, approximately 2,360 acres)

Section 17: E1/2SW1/4, SW1/4SE1/4, E1/2E1/2W1/2SW1/4

Section 20: E1/2W1/2, E1/2, E1/2E1/2W1/2W1/2

Section 21: SW1/4NW1/4, SW1/4

Section 28: NW1/4, N1/2SW1/4, SW1/4SW1/4

Section 29: All

Section 30: E1/2, E1/2W1/2

Waste Rock Storage Facility

T. 14 S., R. 12 E., SLBM, Utah (Approximately 26.8 acres)

Section 18: Portions of NE1/4, SW1/4 and SE1/4 of the NE1/4

All of Lease ML-42648, except the E1/2 of Section 8 and the NE1/4 of Section 17, is included within the Dugout Canyon Mine permit boundary. However, only the S1/2 SE1/4 of Section 9 from Lease ML-42649 is within the permit boundary. The ten acres described in UTU-76601 are also described in UTU-77985. The U.S. Department of Interior, Bureau of Land Management (BLM) right-of-way application UTU-76601 is included in Appendix 1-3.

The disturbed area encompasses 20.80 acres (Mine Facility area, including Gilson well pad and small substation), 24.85 acres (G-2, G-3, G-4, G-5, G-6, G-7, G-9, G-10, G-11, G-12, G-13, G-14, G-15, G-16 and G-17 Degas Well), 2.7 acres (G-4, G-5 and G-6 Degas Well), 1.8 acres (Leach field/pipeline area), 2.7 acres (Pace Canyon Fan Facility) and 26.8 acres (Refuse Pile area) totaling approximately 77 acres. That acreage includes a pre- and post mining road with an area of 1.6 acres and 2.03 acres of undisturbed land within the mine facilities disturbed area and 11.2 acres within the refuse pile disturbed area.

The permit boundary encompasses approximately ~~9,471~~ 9,511 acres which includes the following surface ownership and acreage: 10 acres in the BLM right-of-way, approximately 567 acres of other federal lands, 920 acres of state lands, and fee acreage of approximately ~~7,974~~ 8,014 acres (Plate 1-1 and RA Plate 1-1).

Coal ownership acreage within the permit area includes approximately ~~2,804~~ 2,844 acres of federal coal, approximately 5840 acres of state coal, and 827 acres of fee coal (Plate 1-2 and RA1-1B).

Approximately 745 acres which include the surface subsidence area, refuse pile and leach field areas will not be mined although their acreage is included in the surface and coal ownership acreage totals.

A legal description of the permit boundary includes:

T. 13 S., R. 12 E., SLBM, Utah

- Section 9: S1/2SE1/4
Section 10: S1/2
Section 11: S1/2
Section 13: All except N1/2N1/2
Section 14: All
Section 15: All
Section 16: All
Section 17: E1/2SW1/4; SE1/4
Section 20: E1/2NW1/4; SW1/4NW1/4; N1/2NE1/4
Section 21: N1/2NW1/4; NE1/4
Section 22: N1/2; N1/2S1/2; Portion of N1/2NE1/4SE1/4SE1/4;
Portion of SW1/4NE1/4SE1/4SE1/4;
Portion of the S1/2NW1/4SE1/4SE1/4;
Portion of SW1/4NE1/4SW1/4SE1/4;
Portion of N1/2SE1/4SW1/4SE1/4;
Portion of NE1/4SW1/4SW1/4SE1/4;
Portion of S1/2SW1/4SW1/4SE1/4
Section 23: NW1/4; NE1/4; SE1/4; NE1/4SW1/4; NW1/4NW1/4SW1/4;
S1/2NE1/4NW1/4SW1/4; NW1/4SW1/4NW1/4SW1/4
Section 24: All
Section 25: N1/2N1/2
Section 26: N1/2NE1/4
Section 27: Portion of W1/2NW1/4NW1/4NE1/4
Portion of SW1/4NE1/4NE1/4NW1/4
Portion of E1/2SW1/4NE1/4NW1/4
Portion of SW1/4SW1/4NE1/4NW1/4

T. 13 S., R. 13 E., SLBM, Utah

- Section 17 SW1/4; SW1/4NW1/4; SW1/4SE1/4
Section 18 All except N1/2N1/2
Section 19 All
Section 20 All
Section 21 SW1/4; SW1/4NW1/4; NW1/4NW1/4
Section 28 NW1/4; N1/2SW1/4; SW1/4SW1/4

Section 29 All
Section 30 NW1/4NW1/4; E1/2; E1/2W1/2

T. 14 S., R. 12 E., SLBM, Utah
Section 18 Portion N1/2NE1/4

Topsoil is being stored in T14S, R12E, Section 8, a storage area permitted to Soldier Canyon Mine. See Chapter 2 for additional details concerning the topsoil storage.

Acreage has been added to the permit area which is in excess of the Federal lease acreage to act as a subsidence buffer zone. This acreage has been added in T13S, R12E Section 13 and T13S, R13E Sections 17 and 18.

The refuse pile is located on property owned by Canyon Fuel Company, LLC. The property is located approximately 6.5 miles southwest of the Dugout Canyon Mine in portions of the NE1/4, SW 1/4 and SE 1/4 of the NE 1/4, in a portion of the NW 1/4 of the SE1/4, and in the NW1/4 of the NE 1/4 of Section 18, Township 14 South, Range 12 East, Salt Lake Base Meridian.

BLM Right-of-Way UTU-77985 grants the right-of-entry for the leach field and associated pipeline. Refer to the right-of-way description above.

115 Status of Unsuitability Claims

To the best knowledge of Canyon Fuel Company, LLC, no portion of the area to be permitted is designated, or under study for being designated, unsuitable for mining.

CFC does not propose to conduct coal mining or reclamation operations within 300 feet of any occupied dwelling. A description of operations to be conducted within 100 feet of a public road is provided in Chapter 5 of this M&RP, together with a discussion of plans to protect the interests of the public.

116 Permit Term

The anticipated mining progression during operation of the Dugout Canyon Mine is outlined on Plate 5-7. Rates of production for the permit term are presented in Section 523. Reclamation operations are discussed in Chapters 2, 3, 5, 7, and 8.

117 Insurance, Proof of Publication, and Facilities and Structures Used in Common

Certificates of Insurance issued to Canyon Fuel Company, LLC are located in General Chapter 1 binder for Canyon Fuel Company, LLC Dugout Canyon Mine, Soldier Canyon Mine and Banning Loadout operations.

The newspaper advertisement and the verification of the advertisement appearing in the appropriate newspapers are included in Appendix 1-2.

118 Filing Fee

The permit application was accompanied by a \$5.00 filing fee. UDOGM retains a record of filing fee payments in their office in Salt Lake City, Utah.

120 PERMIT APPLICATION FORMAT AND CONTENTS

This permit application will comply with R645-301-120.

130 REPORTING OF TECHNICAL DATA

All technical data submitted in the permit application will be accompanied by the name or organization responsible for the collection and analysis of data, dates of collection and descriptions

of methodology used. Technical analyses will be planned by or under the direction of a qualified professional in the subject to be analyzed.

140 MAPS AND PLANS

The maps and plans in the Mining and Reclamation Plan will correspond with the requirements in R645-301-140.

150 COMPLETENESS

CFC believes the information in this permit application to be complete and correct.

Canyon Fuel Company, LLC
SCM/Dugout Canyon Mine

Mining and Reclamation Plan
~~December 29, 2006~~ June 2006

APPENDIX 1-4

Disturbed Area Legal Description

LEGAL DESCRIPTION OF BONDED AREA:

Waste Rock Storage Facility

T. 14 S., R. 12 E., SLBM, Utah (Approximately 26.8 acres)

Section 18: Portions of NW1/4NE1/4NE1/4
Portions of NE1/4NE1/4NE1/4
Portions of SW1/4NE1/4NE1/4
Portions of SE1/4NE1/4NE1/4
Portions of NW1/4SE1/4NE1/4

Leachfield and Pipeline

T. 13 S., R. 12 E., SLBM, Utah (Approximately 1.8 acres)

Section 22: Portion of SE1/4SE1/4NE1/4SE1/4
Portion of NE1/4SE1/4NE1/4SE1/4
Portion of N1/2NE1/4SE1/4SE1/4;
Portion of SW1/4NE1/4SE1/4SE1/4;
Portion of S1/2NW1/4SE1/4SE1/4;
Portion of SE1/4NE1/4SW1/4SE1/4;
Portion of N1/2SE1/4SW1/4SE1/4;
Portion of NE1/4SW1/4SW1/4SE1/4;
Portion of S1/2SW1/4SW1/4SE1/4
Section 23: Portion of SW 1/4NW1/4NW1/4SW1/4;
Portion of SE1/4NW1/4NW1/4SW1/4;
Portion of NW1/4SW1/4NW1/4SW1/4;
Section 27: Portion of W1/2NW1/4NW1/4NE1/4
Portion of SE1/4NE1/4NE1/4NW1/4
Portion of E1/2SE1/4NE1/4NW1/4
Portion of SW1/4SE1/4NE1/4NW1/4

Main Facilities Area T. 13 S., R. 12 E., SLBM, Utah (Approximately 20.80 acres)

Section 23: A Portion of the following:
NE1/4NE1/4NW1/4SW1/4; NE1/4NW1/4NW1/4SW1/4;
NW1/4NE1/4NW1/4SW1/4;SW1/4SE1/4SW1/4NW1/4;
SE1/4SE1/4SW1/4NW1/4;NW1/4SE1/4SW1/4NW1/4;
NE1/4SE1/4SW1/4NW1/4;SW1/4SW1/4SE1/4NW1/4;
SE1/4SW1/4SE1/4NW1/4;NW1/4SW1/4SE1/4NW1/4;
NE1/4SW1/4SE1/4NW1/4;SW1/4NW1/4SE1/4NW1/4;
SE1/4NW1/4SE1/4NW1/4;NE1/4NW1/4SE1/4NW1/4;
SW1/4NE1/4SE1/4NW1/4;NW1/4NE1/4SE1/4NW1/4;
NE1/4NE1/4SE1/4NW1/4;W1/2SE1/4NE1/4NW1/4;
SW1/4NE1/4NE1/4NW1/4;NW1/4NE1/4NE1/4NW1/4;
NE1/4NE1/4NE1/4NW1/4

Section 14: A Portion of the following:

SE1/4SE1/4SE1/4SW1/4;
NE1/4SE1/4SE1/4SW1/4;
NW1/4SW1/4SW1/4SE1/4

G-2 Thru G-17 Degas Well, (Approximately 24.85 acres)

G-2	Portion of N1/2SW1/4NE1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-3	Portion of N1/2SW1/4NW1/4 Section 19	Township 13 South, Range 13 East, SLBM
G-4	Portion of N1/2NE1/4NW1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-5	Portion of N1/2NW1/4NE1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-6	Portion of S1/2SW1/4NW1/4 Section 18	Township 13 South, Range 13 East, SLBM
G-7	Portion of SW1/4NE1/4SE1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-9	Portion of NW1/4NW1/4SW1/4 Section 21	Township 13 South, Range 13 East, SLBM
G-10	Portion of NE1/4NE1/4SE1/4 Section 20	Township 13 South, Range 13 East, SLBM
G-11	Portion of NE1/4SE1/4SW1/4 Section 20	Township 13 South, Range 13 East, SLBM
G-12	Portion of SE1/4NW1/4SW1/4 Section 20	Township 13 South, Range 13 East, SLBM
G-13	Portion of NW1/4NE1/4SE1/4 Section 19	Township 13 South, Range 13 East, SLBM
G-14A	Portion of SW1/4SW1/4SE1/4 Section 17	Township 13 South, Range 13 East, SLBM
G-15	Portion of NW1/4SE1/4NE1/4 Section 19	Township 13 South, Range 13 East, SLBM
G-16	Portion of SW1/4SE1/4SE1/4 Section 18	Township 13 South, Range 13 East, SLBM
G-17	Portion of SE1/4NW1/4SE1/4 Section 18	Township 13 South, Range 13 East, SLBM

Pace Canyon Fan Facility Township 13 South, Range 13 East, SLBM (Approximately 2.7 acres)
Section 30: Portion of E1/2NW1/4NW1/4

Total Approximately 77 Acres

CHAPTER 2

SOILS

CHAPTER 2

SOILS

210 INTRODUCTION

This chapter and associated appendices of this M&RP contain all pertinent information relating to identification, management, and reclamation activities associated with the soil resources present in the disturbed area of the Dugout Canyon Mine and the Pace Canyon Fan Portal Breakout. The information has been compiled from the previously approved soil sections for the Sage Point-Dugout Canyon Mine and Soldier Canyon Mine permits, ACT/007/009 and ACT/007/018, respectively, as well as new soil survey information gathered as part of this permit application. The soil studies were conducted in accordance with the Utah Division of Oil, Gas, and Mining guidelines that were in effect at the time each study was conducted. All previous surveys fulfilled the requirements established by the U.S. Soil Conservation Service (SCS). The site specific soil survey conducted for this permit application was conducted in accordance with the standards set by the National Cooperative Soil Survey and analyzed by horizon according to Table 1 of the Division's "Guidelines for the Management of Topsoil and Overburden for Underground and Surface Coal Mining" (Leatherwood, 1988).

Additional information can be found in the following amendments: Methane Degassification Amendment (August 2003), Refuse Pile Amendment (February 2003), and the Leachfield Addendum A-1 (March 2001). The remainder of the State Lease ML-48435-OBA (SITLA Lease) was incorporated into the Dugout Canyon Mine permit area in 2005.

A base map of the soils in the permit area has been created by compiling maps from the "Soil Survey of Carbon Area, Utah" prepared by the SCS (Jensen, 1988). The base map illustrates the locations and areal extent of the endemic soil resources within the permit area at an Order III level (Plate 2-1). In the disturbed area of the permit area, an Order I survey was conducted. The locations and areal extent of the endemic soil resources within the disturbed area identified during the Order I survey are illustrated on Plate 2-2.

This chapter provides a description of the pre-mining resources as specified under R645-301-221. Topsoil and subsoil to be saved under R645-301-232 will be removed and segregated from other material. After removal, topsoil will be immediately redistributed in accordance with R645-301-242, stockpiled pending redistribution under R645-301-234, or if demonstrated that an alternative procedure will provide equal or more protection for the topsoil, the Applicant will seek approval from the Division.

In 2007, 40 acres was added to Federal Coal Lease U-07064-027821 to accommodate a revised mine plan. Refer to Plate 1-2 for the location of the acreage incorporated into the permit boundary.

220 ENVIRONMENTAL DESCRIPTION

The Dugout Canyon Mine facilities are located in the northern Book Cliffs - Roan Plateau region. More specifically, the mine is located within Dugout Canyon and Pace Canyon. The majority of the disturbed area is located in Dugout Canyon, with fan portal facilities located in Pace Canyon (Plate 2-1 and PC5-2). The elevation of the disturbed area ranges between approximately 7000 and 7150 feet above MSL. Soils in the mine area are not cultivated due to their thin nature and relatively steep slopes on which they lie. These soils have formed in colluvium derived from sandstone and shale. Soils in the area are usually shallow and consist predominantly of stony to gravelly sandy loams with moderate permeability. The soils are highly susceptible to water erosion. Rock outcrops consist of alternating layers of sandstone and shale. Subordinate amounts of coal are also present.

The Pace Canyon Fan Portal Breakout is located in Pace Canyon (T13S, R13E, Section 30, N1/2NW14). The elevation of the disturbed area ranges between approximately 6950 and 7060 feet above MSL. Soils in the mine area are not cultivated due to their thin nature and relatively steep slopes on which they lie. These soils have been previously disturbed by various activities in the canyon, such as road construction, exploration, mining, logging, etc. The fan area encompasses steep rocky canyon walls with unconsolidated sediment benches.

221 Prime Farmland Investigation

As part of the application for the Sage Point-Dugout Canyon Mine permit, ACT/007/009, a reconnaissance of the disturbed areas was conducted in 1980 to determine if prime farmland was present, and if present, whether it would be impacted by mining activities. The reconnaissance included the presently-proposed disturbed area within the Dugout Canyon Mine permit area. Copies of the applicable pages from the prime farmland investigation for the Sage Point-Dugout Canyon Mine permit and correspondence with the Soil Conservation Service have been included as Appendix 2-1. One area within the previous area of investigation was determined to potentially be prime farmland. However, this area was located near the mouth of Soldier Creek Canyon, outside of the presently proposed permit area. No prime farmland was found in Dugout Canyon or anywhere else within the presently-proposed permit area during the previous investigation.

As part of this permit application, a survey of the disturbed area of the Dugout Canyon Mine was conducted to determine whether the soils could be considered as prime farmland. The Dugout Canyon Mine disturbed area lies within the Rock outcrop-Rubbleland-Travessilla complex and Croydon loam soils area (Plates 2-1 and 2-2). Neither of these soils are considered suitable prime farmland as described by the SCS (Jensen, 1988). No evidence of past cultivation of the soils in the disturbed area was found during the site investigation. Hence, based on the results of both detailed investigations conducted within the area, it is concluded that no prime farmland exists within the proposed permit area.

The survey for prime farmland investigation for the fan portal site was completed by Leland Sasser of the NRCS. The area planned for disturbance is not considered prime farmland. Refer to Appendix 2-1 for a copy of Mr. Sasser's letter.

222 Soil Survey

Soil survey information for those portions of the permit area to be affected by surface operations at the Dugout Canyon Mine is presented in Sections 222.100 through 222.300.

222.100 Soils Map

A map delineating the areal extent of the endemic soils resources within the permit area at an Order III survey level is presented on Plate 2-1. A description of these soils has been reproduced from the SCS "Soil Survey of the Carbon County Area" (Jensen, 1988), and has been included as Appendix 2-2. An Order I soil survey was conducted of the Dugout Canyon Mine disturbed area in October and November 1995. Plate 2-2 illustrates the areal extent of the soils studied as part of the Order I soil survey, the location of the soil test pits excavated during the survey, and the extent of the identified soils.

Dan Larsen , Soil Scientist performed a survey of the Fan Portal area in 2003 and 2004. The 2003 survey was done in conjunction with a BLM environmental assessment for coal exploration holes. The 2004 survey was done on November 5, in conjunction with the proposed installation of the fan. A copy of the 2004 survey, test pit logs and a map showing the location of 2003 -2004 test pit locations is in Appendix 2-3.

The expansion of the permit area in 2007 to add acreage to Federal Coal Lease U-07064-027821 (40 acres, NW1/4NW1/4, Section 21, Township 13S, Range 13E) will include soils mapped as Units 62, 97, and 100 (see Plate 2-1). Surface disturbance will be permitted as needed to facilitate mining activities.

222.200 Soil Identification

Following is a list of the soils found in and adjacent to the permit area. Their corresponding map units as illustrated on Plate 2-1 are also listed.

<u>Map Unit</u>	<u>Soil Identification</u>
3	Badland-Rubbleland-Rock outcrop complex
6	Beje-Comodore complex
7	Beje-Trag complex

CHAPTER 3

BIOLOGY

CHAPTER 3

BIOLOGY

310 INTRODUCTION

This chapter presents a description of the biological resources found on the Dugout Canyon permit and adjacent areas. Additional information can be found in the following amendments: Methane Degassification Amendment (August 2003), Refuse Pile Amendment (February 2003), and the Leachfield Addendum A-1 (March 2001). The remainder of the State Lease ML-48435-OBA (SITLA Lease) was incorporated into the Dugout Canyon Mine permit area in 2005. In 2007, 40 acres was added to Federal Coal Lease U-07064-027821 to accommodate a revised mine plan. Refer to Plate 1-2 for the location of the acreage incorporated into the permit boundary.

The data used in preparation of this chapter have been gathered from the Sage Point-Dugout Canyon Mining and Reclamation Plan, Soldier Creek Coal Company Mining and Reclamation Plan, Environmental Research and Technology, Inc., Utah Division of Wildlife Resource (UDWR), Utah State Fish and Game, Eureka Energy Company (Nicolas Temnikov and Christopher A. Slaboszewicz), Soil Survey of Carbon Area, Utah, aerial photography, and Natural Gas Corporation of California.

311 Vegetative, Fish and Wildlife Resources

Vegetative, fish, and wildlife resource conditions in and adjacent to the proposed Dugout Canyon Mine are discussed in Section 320.

312 Potential Impact to Vegetative, Fish and Wildlife Resources

Potential impacts to vegetative, fish, and wildlife resources and the associated mitigation plan are presented in Sections 330 and 340 of this chapter.

The 2004 spring inventory identified no active and or tended Golden Eagle nests within a 1/4 mile of the proposed site. An inventory in 2002, 2003 and 2004 for Mexican Spotted owl and Goshawk did not reveal the presence of these species within the fan project area.

Mammals - Ninety-two (92) species of mammals have the potential to inhabit the region. Of these, the following species; mule deer, *Odocoileus hemionus*, elk, *Cervus elaphus* and pronghorn antelope, *Antilocapra americana*, have been identified to live within or adjacent to the affected area.

As shown on Plate 3-2, the area of the fan site is designated summer range for mule deer and year-long range for elk.

Pronghorn antelope occupy the salt desert shrub habitat of the lower elevation ranges along the Clark Valley Road. This habitat is classified as high priority year-long range for pronghorn.

Threatened and Endangered Plant and Wildlife Species. Passage of the Endangered Species Act of 1973 (Public Law 23-20S) provided the legal basis for establishment of lists of endangered and threatened plant and wildlife species (Appendix 3-3).

Although three species (black-footed ferret, bald eagle, and peregrine falcon) on the list could potentially inhabit the area, an inventory of endangered wildlife species performed in 1979 by the UDWR recorded no threatened and endangered species within the proposed permit area. No confirmed sightings of black-footed ferrets have occurred within Carbon County during 1995, 1996, and the first quarter of 1997, however bald eagles have been seen flying in the vicinity of the mine (Bill Bates, UDWR).

A literature review and field studies for both the Soldier Canyon and the Sage Point - Dugout Canyon permit documents were performed to assess the possible presence of any threatened, endangered, or sensitive plant and wildlife species in the respective permit and adjacent areas.

These study areas included the proposed Dugout Canyon disturbed area. The literature review indicated that no species listed (or proposed as candidates) by the U.S. Fish and Wildlife Service (FWS) as threatened or endangered were likely to inhabit the area. In addition, the field investigations which occurred in 1979, 1980, 1983, and 1984 did not identify or locate any threatened or endangered species. No threatened or endangered plant species including Canyon sweetvetch were found within the disturbed area by Robert Thompson during his 1995 survey (see Robert Thompson letter, Appendix 3-1). Mr. Thompson is qualified and has performed threatened and endangered surveys for the U.S. Forest Service.

As reported in the 1997 bat survey "we noted no suitable habitat, did not record via detectors or capture, or note by indicators presence of *Corynorhinus townsendii*. It is our opinion the bat does not occur in the immediate vicinity of the proposed disturbance area. We also did not note suitable habitat for or encounter *Euderma maculatum* by mist net, via detectors or during audible bat transects".

Windy Gap Process as it Applies to Existing Coal Mines in the Upper Colorado River Basin

Per meetings with Division of Water Quality personnel during application for a UPDES permit in 2004, "there is no data supporting the premise that surface waters associated with the area of the mine operations reached the Price River or Colorado River prior to or since mining disturbance".

Mining Consumption:

Culinary Water is purchased from PRWID and hauled by D & D Trucking to the Mine.

Estimated **Purchased** Gallons/yr: 1,003,200

Ventilation Consumption/Evaporation:

29,354 gallons/day (3/05/04 ventilation survey)

44,000 gallons/day (9/13/04 ventilation survey)

$73,354 \times 0.5 = 36,677$ gallons/day (survey average)

$36,677 \times 365 = 13,387,105$ gallons/yr

Coal Producing Consumption/Coal Moisture Loss:

Water added to coal produced -	4.03% inherent moisture - source Dugout Geologist
	5.80% run-of-mine moisture - year to date average
	1.77% moisture added to coal by cutting operation

Projected Tonnage 2004 4,245,737 tons

Projected Tonnage 6 year average 4,369,084 tons

Tons water/yr 77,333

Pounds water/yr 154,665,562

Gallons water/yr 18,522,822

Sediment Pond Evaporation:

Mine Site Pond 0.107 acres (surface area)

18.1 in/yr (high estimate based on HCI Technical Memo, August 22, 2002)

0.16 ac/ft

7030 gallons/yr

Refuse Pile Pond 0.41 acres (surface area)

9 in/yr

0.31 ac/ft

5612 gallons/yr (five month period, high estimate)

Spring and Seeps Effects From Subsidence - Not Applicable

Alluvial Aquifer Abstractions into Mines - Not Applicable

Alluvial Well Pumpage - Not Applicable

Deep Aquifer Pumpage - Not Applicable

Postmining Inflow to Workings - Not Applicable

Direct Diversions: - Not Applicable

Dust Suppression - 3,500 gallons per truck load, 3 loads per day, for 30 days = 315,000 gallons plus 3,000 per truck load, 1.25 loads per day, for 45 days = 168,750. Total: 483,750 gallons per year.

Mine Discharge: 6 Month Average 362,118 gpd = 132,172,948 gal/yr

Calculation estimates for water use in 2004 were necessary since we are using 2004 purchases and usage and the year is 2 months short.

Pace Canyon

"In accordance with the United States Fish and Wildlife Service's (USFWS) protocols, and inventory for the presence of threatened, endangered, and sensitive fauna and floral species was conducted on August 13, 14, and September 29, 2003. Loggerhead, shrike, burrowing owl, Northern Goshawk, Despain foot cactus, Wright fishhook cactus and Creutzfeldt cryptantha and

neo-tropical migratory birds were the sensitive species of concern within the area. A thorough search of all seven well sites and associated access roads did not reveal the presence of these species (BLM, Environmental Assessment, UT-070-2003-55)." A map of the area inventoried is provided in Appendix 3-4 within the referenced environmental assessment, it should be noted that the area covered by the aforementioned environmental assessment is the same area proposed for the construction of the Pace Canyon fan facilities. In addition a sensitive plant species survey was conducted by Mt. Nebo in August 2003. To initiate the study, appropriate agencies were consulted (e.g. Utah Natural Heritage Program) and other sources were reviewed for potential plant species that are known to be rare, endemic, threatened, endangered or otherwise sensitive in the area of study. The only plant identified was canyon sweetvetch. No rare, endemic, threatened, endangered or otherwise sensitive species were found in the area proposed for disturbance.

Lease Modification U-07064-027821

Tony Wright and Leroy Mead of the Division of Wildlife Resources (DWR) were contacted on January 19, 2007 to determine the potential for threatened or endangered wildlife species to be present within the proposed lease modification area (NW1/4NW1/4 Section 21, Township 13S, Range W13 East). Tony Wright reviewed an aerial photograph of the area on January 19th and Leroy Mead had visited the area in November 2006. Mr. Wright said there was potential for goshawks (species of concern for the DWR) to be in the general area describing their habitat as mature ponderosa pines or stands of mature firs. The 40 acre modification has a stand of mature firs which was identified by Mr. Wright as potential habitat for goshawks. Mr. Wright recommended a goshawk survey be done if surface disturbance is planned for the mature stand of firs in W1/2NW1/4NW1/4 of Section 21. Mr. Wright also identified a potential mature stand of firs in N1/2NE1/4 of Section 17.

No threatened or endangered wildlife species were identified as being in the area by either Mr. Wright or Mr. Mead. Mr. Wright consulted several sources before determining the lack of threatened and endangered species in the area. Mr. Wright inquired if there were any large ponds

of water that would be impacted by disturbance within the lease modification area, the permittee is unaware of any large ponds within the propose lease modification area.

Patrick Collins of Mt. Nebo Scientific was contacted on January 19, 2007 to determine if threatened or endangered plant species were known to be present within the proposed lease modification area. Mr. Collins visited the lease modification area in November 2006, at the time no threatened or endangered plant species were located. Appropriate agencies were consulted (e.g. Utah Natural Heritage Program) and other sources were reviewed for potential plant species that are know to be rare, endemic, threatened, endangered or otherwise sensitive in the lease modification area. A description of the research performed by Mt. Nebo Scientific and the conclusions are included in Appendix 3-1

Habitats of Unusually High Value. High value habitats in Dugout Canyon include the riparian area and the cliff escarpments. Major portions of established habitat will not be disturbed, but the restricted access by wildlife to the water source within the area of disturbance could displace wildlife. The cliff areas adjacent to the disturbed area could harbor mountain lion, bobcat and bear; and with increased activity and noise they may avoid the area. Elk and deer who may frequent Dugout Canyon will likely avoid the area during the heaviest of activity, but resume their normal patterns once they become accustomed to it.

In a letter dated April 22, 1996 to James W. Carter the director of UDOGM, Robert G. Valentine director of the UDWR makes the following comment "much of the area is classified as critical deer winter range and is heavily used by deer and occasionally by elk and antelope". Use classification drawings of the Dugout Canyon area for large mammals (deer, elk, antelope, etc.) were requested from the UDWR in January of 1996 by SCM. The cover letter dated January 30, 1996 from the UDWR and the drawings are included in Appendix 3-3 for interpretation by UDOGM. SCM has interpreted and transferred the information (provided by UDWR) to Plate 3-2. The use classifications were extended on Plate 3-2 with the incorporation of Federal Lease U-07064-027821.

Canyon Fuel Company, LLC
SCM/Dugout Canyon Mine

Mining and Reclamation Plan
~~January 29, 2007~~ ~~December 29, 2006~~

APPENDIX 3-1

Vegetation Data

Add to the back of the existing information



January 27, 2007

Vicky Miller
CANYON FUEL COMPANY, LLC.
Dugout Canyon Mine
P.O. Box 1029
Wellington, UT 84542

RE: T&E Plant Species

Dear Vicky:

In response to your questions as to the likelihood of threatened or endangered plant species occurring in a specific 40-acre area near Pace Canyon (Section 21, T13S, R13E), please note the following comments:

- I have *not* surveyed the entire 40-acre area for T&E species during the growing season.
- I have visited the proposed drill site that is located within the 40-acre area on November 11, 2006 to get an idea of the habitat for the proposed drill site (G-20).
- I have reviewed the project area using recent aerial photographs at a scale of 1":200'.
- I have reviewed the files that I keep at *Mt. Nebo Scientific, Inc.* related to threatened, endangered, rare, and sensitive species.
- I have reviewed the most recent Utah Natural Heritage Program (UNHP) database for threatened, endangered, and sensitive species in the area.
- I have reviewed several previous reports that I have written in the immediate area that included T&E surveys.

Relying on the above statements for my findings, I find it very unlikely that any threatened, endangered, rare, or otherwise sensitive plant species would occur in the project area.

The single plant species that could possibly occur in the area (also unlikely) would be canyon sweet vetch (*Hedysarum occidentale* var. *canone*). This species is listed as "sensitive" by the USDA Forest Service.

I understand that, except for the area near the proposed de-gasification well numbered G-20, the 40-acre parcel will have *no surface disturbance*. This, of course, strongly decreases the chance of any impacts to any plant species in the area.

I hope this information is helpful. Please call me if you have questions or comments. I would be happy to discuss this issue with the specialists at the State of Utah, Division of Oil, Gas & Mining.

Sincerely,

A handwritten signature in cursive script, appearing to read "Patrick D. Collins".

Patrick D. Collins, Ph.D.
Biologist

CHAPTER 4

LAND USE AND AIR QUALITY

CHAPTER 4

LAND USE AND AIR QUALITY

410 LAND USE

This section of the permit application includes descriptions of the premining and proposed postmining land use(s). Additional information can be found in the following amendments: Methane Degassification Amendment (August 2003), Refuse Pile Amendment (February 2003), and the Leachfield Addendum A-1 (March 2001). The remainder of the State Lease ML-48435-OBA (SITLA Lease) was incorporated into the Dugout Canyon Mine permit area in 2004. In 2007, 40 acres was added to Federal Coal Lease U-07064-027821 to accommodate a revised mine plan. Refer to Plate 1-2 and 4-1 for the location of the acreage incorporated into the permit boundary. Surface disturbance will be permitted as needed to facilitate mining activities.

411 Environmental Description

A statement of the conditions and capabilities of the land to be affected by coal mining and reclamation operations follows in this section.

411.100 Premining Land Use

The permit area has been primarily utilized as rangeland for livestock and wildlife habitat. Some crops related to the livestock industry have been developed along the creek bottoms adjacent to Soldier Creek Road. However, no crops have been raised within the permit area. Recreational use of the permit area is limited due to lack of access through private property.

The predisturbed area boundary outlined on Plate 5-4 reflects disturbance prior to 1965. The boundary was compiled from a 1980 map of the pre-mining topography prepared by Eureka Energy Company. According to historical data the Dugout Canyon area was last mined in 1964.

The rock art panels are unstable and could be destroyed if blasting for road expansion is done within a 600-foot radius of the panels. SCM will make every effort to protect these rock art panels without drawing unnecessary attention to their location. The panels have been preserved primarily because the general public does not know of their existence. SCM will strive to maintain this condition.

The AERC report provides descriptive and valuational information for the two sites.

Cultural and historical inventories associated with the SITLA lease tract and adjacent areas are located in Appendix 4-1 and 4-3. This information should be held confidential by the Division.

The information in Appendix 4-3 was collected starting in 1980 and the last report was completed in 2003. According to information collected from the Price office of the BLM on March 23, 2004 and conversations with Mr. David Miller, there were no sites with artifacts considered for registration found in the areas surveyed and reported in 1980 through 1991. The conclusions were the same in the surveys conducted in 2001 - 2003. A letter from John Senulis, Archeologist with Senco Phenix detailing their file search and surveys of the area has been incorporated into Appendix 4-3. The letter is addressed to Kenny Wintch, the SITLA Archeologist and a copy has been sent to Mr. Dykman at SHPO. The letter states " No sites eligible for nomination to the National Register of Historic Places have been found in or adjacent to the permit expansion area. It is very unlikely that future survey will reveal sites eligible.....Furthermore all activity will be underground with no surface disturbance. For these reasons a finding of "no effect on historic properties" is appropriate and archeologic clearance without stipulations is recommended."

Federal Lease Modification U-07064-027821

Senco-Phenix (Archeological Consulting Services) conducted a Class 1 file search for the NW1/4NW1/4, Section 21, Township 13S, Range 13E (approximately 40 acres). The 40 acres has privately owned surface and federal coal.

The Class 1 file search results listed a survey in 2006 conducted by Senco-Phenix which included a walking survey of a portion of the NW1/4NW1/4, Section 21, Township13S Range 13East. The survey area and a road surveyed in 2005 are shown on a drawing attached to a letter addressed to Vicky Miller, dated January 23, 2007 from Senco-Phenix. Copies of the letter and drawing have been provided to the Division for inclusion into Appendix 4-1 of the confidential folder as has a copy of the walking survey listed in the letter. **No cultural resources** were located during either of the surveys located by the file search, listed in the aforementioned letter.

Cultural and Historic Resource Maps. Maps and photographs for the evaluated cultural and historical sites are contained in the confidential folder.

There are no cemeteries, public parks, or units of the National System of Trails or the Wild and Scenic Rivers System located within the Dugout Canyon Mine permit boundary. The National Register of Historic Places was consulted by AERC and no registered historic or prehistoric properties will be affected by the proposed mine development.

SCM agrees to notify the Division and SHPO of previously unidentified cultural resources discovered in the course of mining operations. Arch Coal Company has a registered professional geologist on staff assigned to Dugout Canyon Mine available to confirm vertebrate fossil material discovered during earth moving activities during construction of the Pace Canyon Fan Portal site. SCM also agrees to have any such cultural resources evaluated in terms of NRHP eligibility criteria. Protection of eligible cultural resources will be in accordance with Division and SHPO requirements. SCM will also instruct its employees that it is a violation of federal and state laws to collect individual artifacts or to otherwise disturb cultural resources.

Coordination with State Historic Preservation Officer. AERC contacted SHPO concerning the Dugout Canyon Mine site and a copy of their report was forwarded to SHPO. The National Register of Historic Places was consulted by AERC and no registered historic or prehistoric properties will be affected by the proposed mine development.

Dugout Canyon's mining activities will be conducted in compliance with the requirements of the Federal Clean Air Act and the Utah Air Conservation Rules.

422 Compliance Efforts

No mining activities will be conducted without a current AO from the Utah Division of Air Quality (DAQ). All activity will be conducted in compliance with the conditions established in the AO. A Notice of Intent (NOI) to construct has been submitted in accordance with DAQ document "Preparing Your Notice of Intent". Preconstruction conferences will be held as required by DAQ personnel. Emissions will be estimated using procedures and factors supplied by DAQ. A copy of the Approval Order and supporting information can be found in Appendix 4-1.

423 Monitoring Program

An NOI ~~will be~~ **was** submitted to DAQ requesting approval for a production rate of ~~2~~ **7** million tons per year. This rate exceeds immediate production plans, but approval at this level will preclude the necessity of reapplying if future production plans should increase. This approach is appropriate since an AO is subject to specific operating conditions rather than to a time period and thus does not expire at the end of a 5-year period as does the approval of the mining permit. If operating conditions change sufficiently to invalidate the AO, a new NOI will be prepared.

The operating conditions are specified in the NOI and form the basis of the AO. All monitoring requirements and fugitive dust control practices as established by the AO will be followed by SCM. Should additional requirements be established under the provisions of R645-301-244.100 or R645-301-244.300, these requirements will also be followed by SCM.

424 Fugitive Control Plan for Production Rates Less than One Million Tons Per Year

During startup, or other situations where production is less than one million tons per year, the same procedures established in Section 423 will be followed and will be subject to the conditions of the

CHAPTER 5
ENGINEERING

CHAPTER 5 ENGINEERING

510 INTRODUCTION

This chapter provides a discussion of general engineering aspects, an operation plan, a reclamation plan, design criteria, and performance standards related to the Dugout Canyon Mine. The proposed coal mining and reclamation activities associated with the mine have been or will be designed, located, constructed, maintained, and reclaimed in accordance with the operation and reclamation plans.

Additional information can be found in the following amendments: Methane Degassification Amendment (August 2003), Refuse Pile Amendment (February 2003), and the Leachfield Addendum A-1 (March 2001). The remainder of the State Lease ML-48435-OBA (SITLA Lease) was incorporated into the Dugout Canyon Mine permit area in 2005. **In 2007, 40 acres was added to Federal Coal Lease U-07064-027821 to accommodate a revised mine plan. Refer to Plate 5-7 for the location of the acreage (NW1/4NW1/4, Section 21, Township 13S, Range 13E) incorporated into the permit boundary. Surface disturbance will be permitted as needed to facilitate mining activities.**

511 General Requirements

This permit application includes descriptions of the proposed coal mining and reclamation operations together with the appropriate maps, plans, and cross sections. Potential environmental impacts as well as methods and calculations utilized to achieve compliance with the design criteria are also presented.

512 Certification

CHAPTER 7
HYDROLOGY

CHAPTER 7 HYDROLOGY

710 INTRODUCTION

711 General Requirements

This chapter presents a description of:

- Existing hydrologic resources within the permit and adjacent areas;
- Proposed operations and the potential impacts to the hydrologic balance;
- Methods of compliance with design criteria and the calculations utilized to show compliance;
- Applicable hydrologic performance standards; and
- Hydrologic reclamation plans for the Dugout Canyon Mine.

Additional information can be found in the following amendments: Methane Degassification Amendment (August 2003), Refuse Pile Amendment (February 2003), and the Leachfield Addendum A-1 (March 2001). The remainder of the State Lease ML-48435-OBA (SITLA Lease) was incorporated into the Dugout Canyon Mine permit area in 2005. In 2007, 40 acres was added to Federal Coal Lease U-07064-027821 to accommodate a revised mine plan. Refer to Plate 1-2 for the location of the acreage incorporated into the permit boundary.

712 Certification

All maps, plans, and cross sections presented in this chapter have been certified by a qualified, registered professional engineer.

713 Inspection

Impoundments associated with the mining and reclamation operations will be inspected as described in Section 514.300 of this M&RP.